

What is claimed is:

1           1. A substantially pure polypeptide comprising an amino acid sequence at least 40%  
2 identical to SEQ ID NO:1, wherein the polypeptide inhibits the differentiation of myoblasts  
3 into myotubes.

1           2. The polypeptide of claim 1, wherein the amino acid sequence is at least 60%  
2 identical to SEQ ID NO:1.

1           3. The polypeptide of claim 1, wherein the amino acid sequence is at least 80%  
2 identical to SEQ ID NO:1.

1           4. The polypeptide of claim 1, wherein the amino acid sequence is at least 90%  
2 identical to SEQ ID NO:1.

1           5. A substantially pure polypeptide comprising the sequence of SEQ ID NO:1.

1           6. A substantially pure polypeptide comprising the amino acid sequence of SEQ ID  
2 NO:1, with up to 30 conservative amino acid substitutions, wherein the polypeptide inhibits  
3 the differentiation of myoblasts into myotubes.

1           7. A substantially pure polypeptide encoded by a nucleic acid that hybridizes under  
2 high stringency conditions to a probe the sequence of which consists of SEQ ID NO:2,  
3 wherein the polypeptide inhibits the differentiation of myoblasts into myotubes.

1           8. An isolated nucleic acid encoding the polypeptide of claim 1.

1           9. An isolated nucleic acid encoding the polypeptide of claim 5.

1           10. An isolated nucleic acid encoding the polypeptide of claim 6.

1           11. An isolated nucleic acid comprising a strand that hybridizes under high  
2 stringency conditions to a single stranded probe, the sequence of which consists of SEQ ID  
3 NO:2 or the complement of SEQ ID NO:2.

1           12. The isolated nucleic acid of claim 11, wherein the nucleic acid encodes a  
2 polypeptide that inhibits the differentiation of myoblasts into myotubes.

1           13. The nucleic acid of claim 12, wherein the amino acid sequence of the polypeptide  
2 comprises SEQ ID NO:1.

1           14. The nucleic acid of claim 11, wherein the strand is at least 15 nucleotides in  
2 length.

1           15. The nucleic acid of claim 14, wherein the nucleic acid is an antisense nucleic acid  
2 that inhibits expression of a polypeptide comprising SEQ ID NO:1.

1           16. The nucleic acid of claim 15, wherein the nucleic acid is at least 15 nucleotides in  
2 length.

1           17. A vector comprising the nucleic acid of claim 8.

1           18. A vector comprising the nucleic acid of claim 9.

1           19. A vector comprising the nucleic acid of claim 10.

1           20. A vector comprising the nucleic acid of claim 11.

1           21. A vector comprising the nucleic acid of claim 12.

1           22. A cultured host cell comprising the nucleic acid of claim 8.

1           23. A cultured host cell comprising the nucleic acid of claim 9.

1           24. A cultured host cell comprising the nucleic acid of claim 10.

1           25. A cultured host cell comprising the nucleic acid of claim 11.

1           26. A cultured host cell comprising the nucleic acid of claim 12.

1           27. An antibody that specifically binds to the polypeptide of claim 1.

1           28. A method of producing a polypeptide, the method comprising culturing the  
2 cultured host cell of claim 22 in a culture, expressing the polypeptide in the cultured host  
3 cell, and isolating the polypeptide from the culture.

1           29. A method of screening for a compound that binds to the protein according to  
2 claim 1, the method comprising the steps of:

- 3           a) contacting a test sample with said protein or a partial peptide thereof;  
4           b) detecting the binding activity of the test sample to said protein or a partial peptide  
5 thereof; and  
6           c) selecting a compound binding to said protein or a partial peptide thereof.

1           30. A compound binding to the protein according to claim 1, wherein said compound  
2 can be isolated using the method according to claim 29.

1           31. A method of screening for a compound that promotes or inhibits the activity of  
2 the protein according to claim 1, the method comprising the steps of:

- 3           a) contacting myoblasts with said protein in the presence of a test sample;  
4           b) detecting the differentiation of the cells into myotubes; and  
5           c) selecting a compound which can increase or decrease the inhibitory activity of the  
6 protein, compared with its inhibitory activity as detected in the absence of said test sample.

1           32. A method of screening for a compound that promotes or inhibits the activity of  
2 the protein according to claim 1, said method comprising the steps of:

3           a) providing p53-deficient cells with a vector expressing said protein, a vector  
4 expressing p53, and a vector expressing a reporter gene in response to p53;

5           b) contacting a test sample with said cells;

6           c) detecting the reporter activity in said cells; and

7           d) selecting a compound that can reduce or increase the reporter activity compared  
8 with the activity in the cells without contact with said test sample (control).

1           33. A compound that promotes or inhibits the activity of the protein according to  
2 claim 1, wherein said compound can be isolated using the method according to claim 31 or  
3 32.